



Library Potential Impacts

Steve Kerr

Bernie Brower



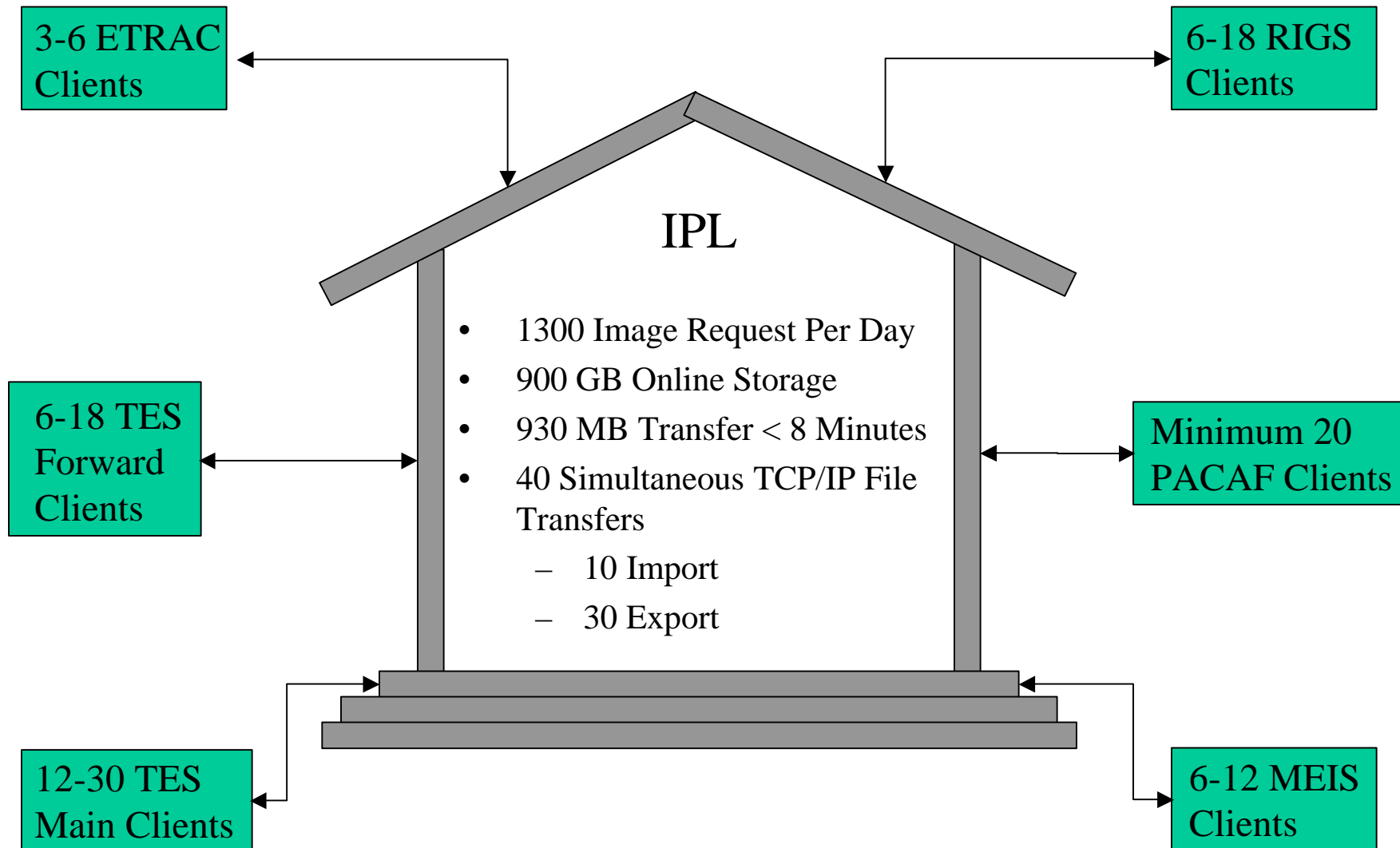
Example: IPL File Conversions

OUTPUT

INPUT	File Formats	TFRD 1.3 DCT	TFRD 2.3 DCT	TFRD 4.3 DPCM	JPEG 8-bit	JPEG 12-bit	JPEG Lossless	NIMA Method 4	Uncompressed NITF	Uncompressed TIFF 6.0	Uncompressed JFIF	Uncompressed GIF	Uncompressed Sun Raster
	TFRD 1.3 DCT					✓ NITF 2.0			✓ NITF 2.0				
	TFRD 2.3 DCT					✓ NITF 2.0							
	TFRD 4.3 DPCM					✓ NITF 2.0			✓ NITF 2.0				
	JPEG 8-bit					✓ 1.1 to 2.0				✓ 1.1 & 2.0			✓ 1.1 & 2.0
	JPEG 12-bit				✓					✓ NITF 2.0			✓ NITF 2.0
	JPEG Lossless												
	NIMA Method 4												
	Uncompressed NITF												
	Uncompressed TIFF 6.0				✓ NITF 2.0	✓ NITF 2.0							✓
	Uncompressed JFIF												
	Uncompressed GIF												
	Uncompressed Sun Raster				✓ NITF 2.0	✓ NITF 2.0				✓			



IPL Throughput Requirements





Impacts on Libraries

- Addition of New compression algorithms/format
 - Already support several compression and formats for import and export
- Increased complexity of JPEG 2000
 - More complex than any other compression
- Reduction in storage space (or increase in quality)
 - 40% savings over 4.3 compressed data
 - 20% savings over 1.3 DCT
 - 33% savings on RRDS generated data
- Increased throughput speed for several products
 - Chipping
 - RRDS generations
 - Changing compression ratio/quality

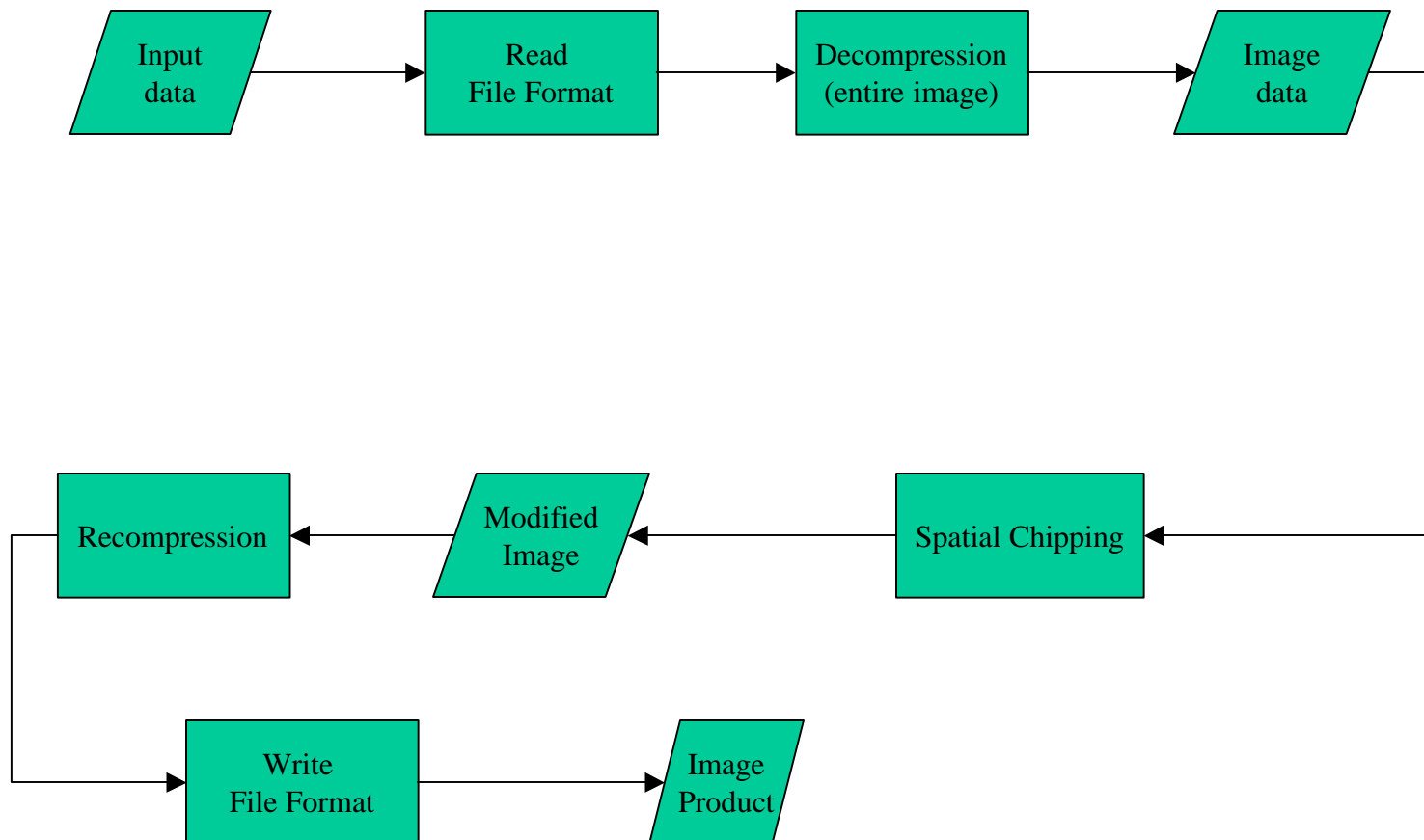


Possible Impacts

- Changing the way RSets and thumbnails are produced
 - JPEG 2000 includes R0-R5, greater than R5 and thumbnails need to be generated
 - Continue to keep thumbnails in JFIF (until browsers are JPEG 2000 enabled)
 - May want to push the RRDS generation to the workstation
 - Start with R5 and work down from there
- How will products be delivered?
 - Mapping data (rectified data)
- Reducing the number of possible inputs
 - Currently support TFRD, NITFS, TIFF, SunRaster
 - Will only need to support NITFS 2.1 JPEG 2000
 - National, tactical, and international (NATO) will support it

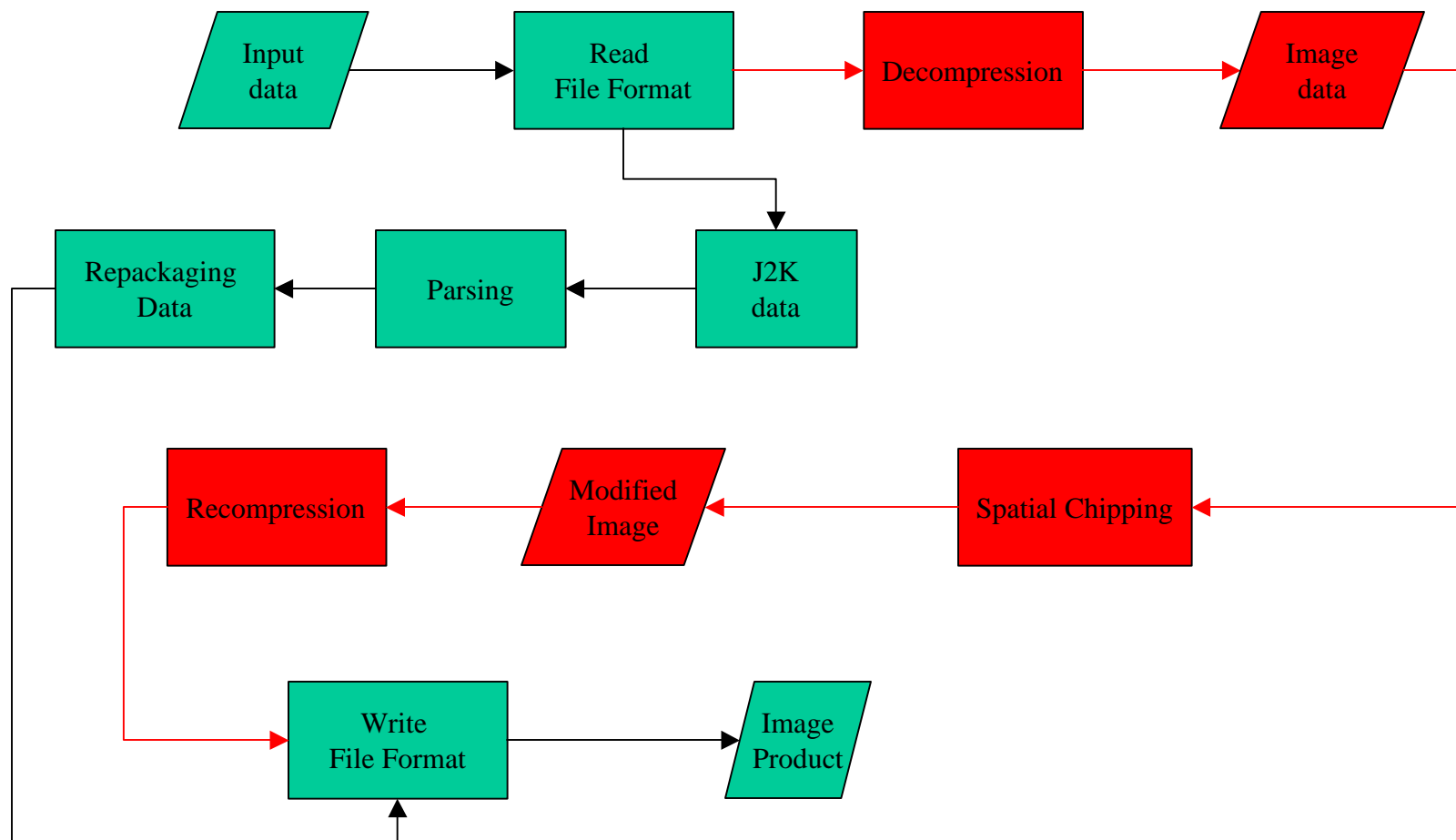


Example Process – Chipping Current



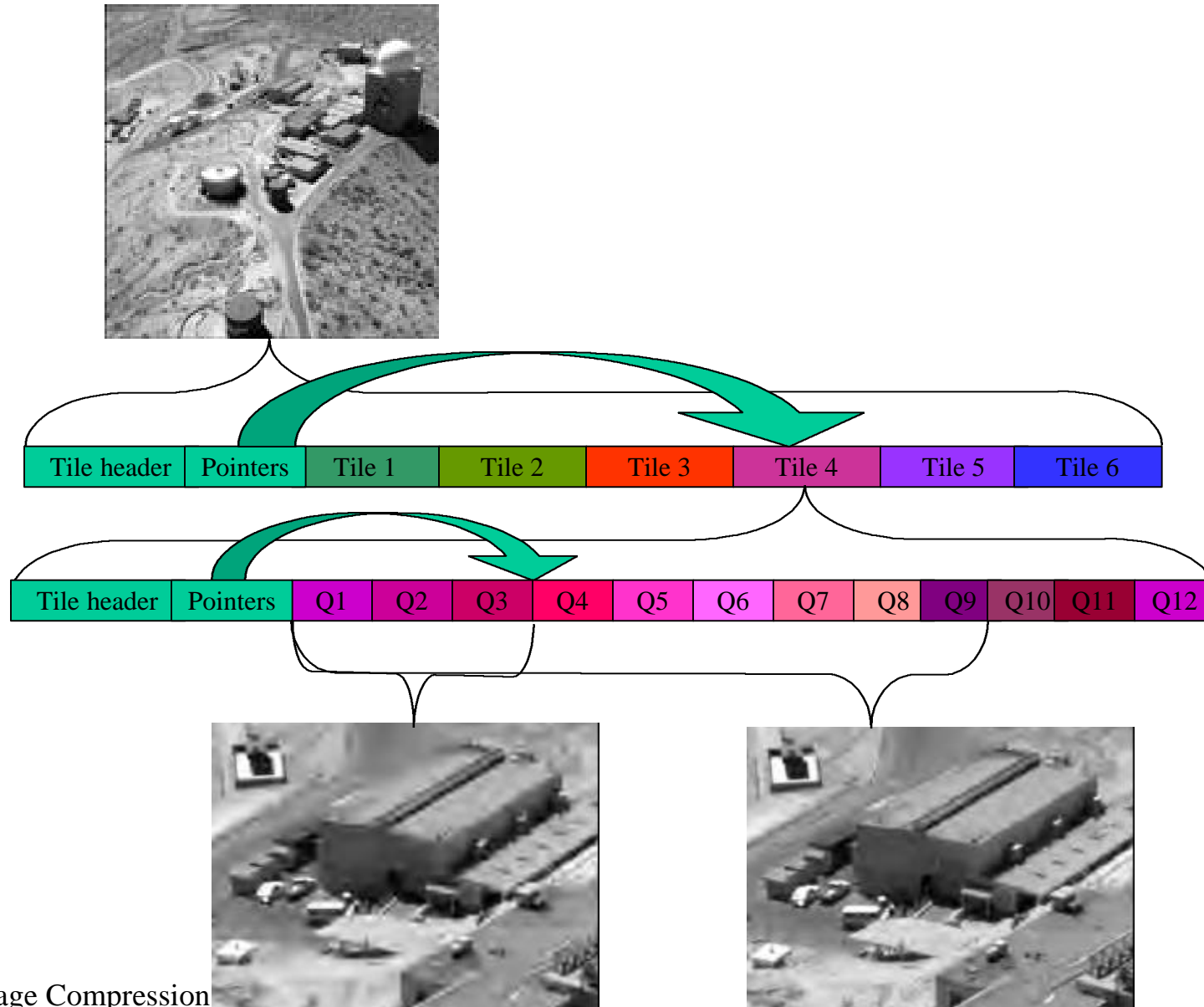


Example Process – Chipping JPEG 2000



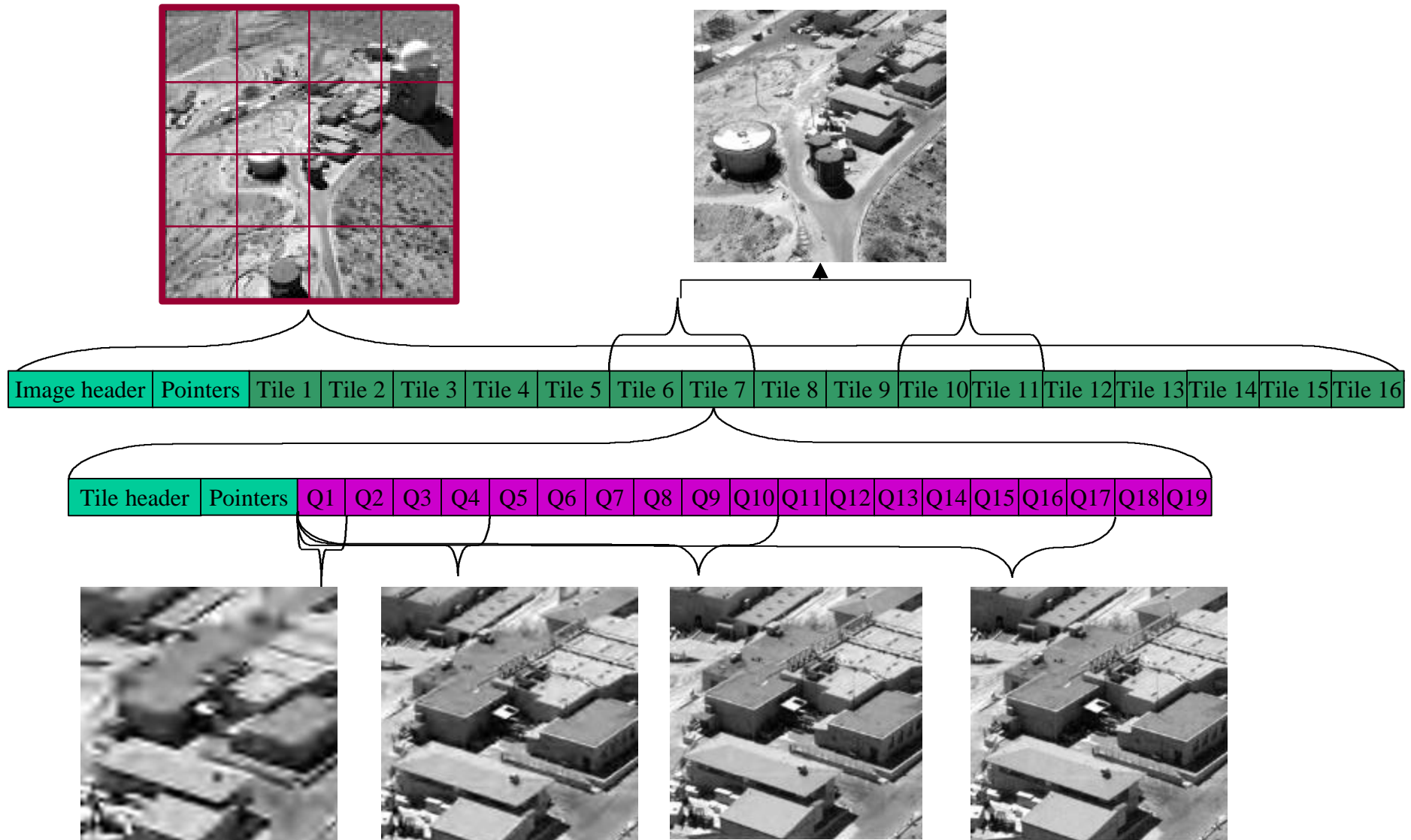


Parsing Bitstream



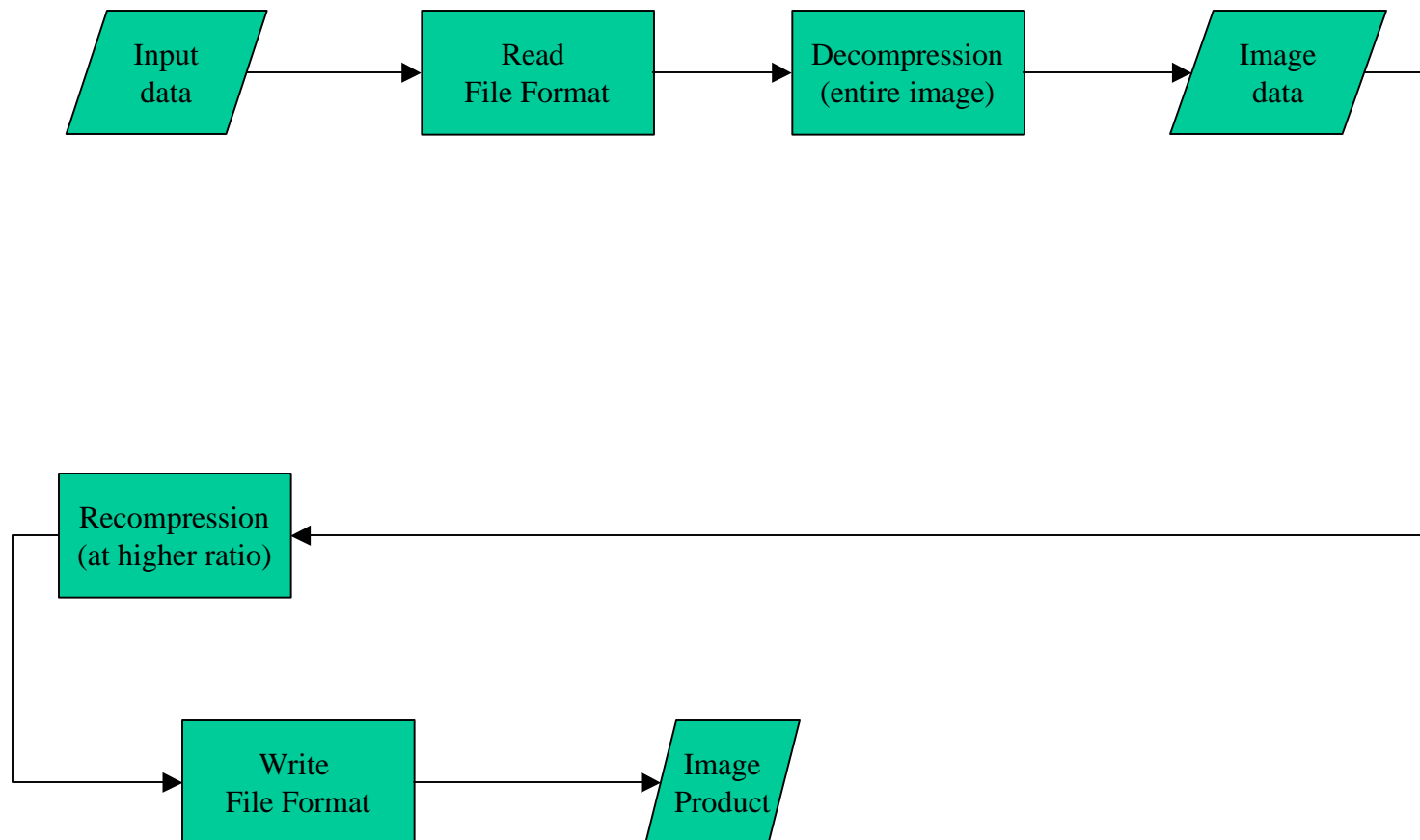


J2K Quality Progressive bit stream



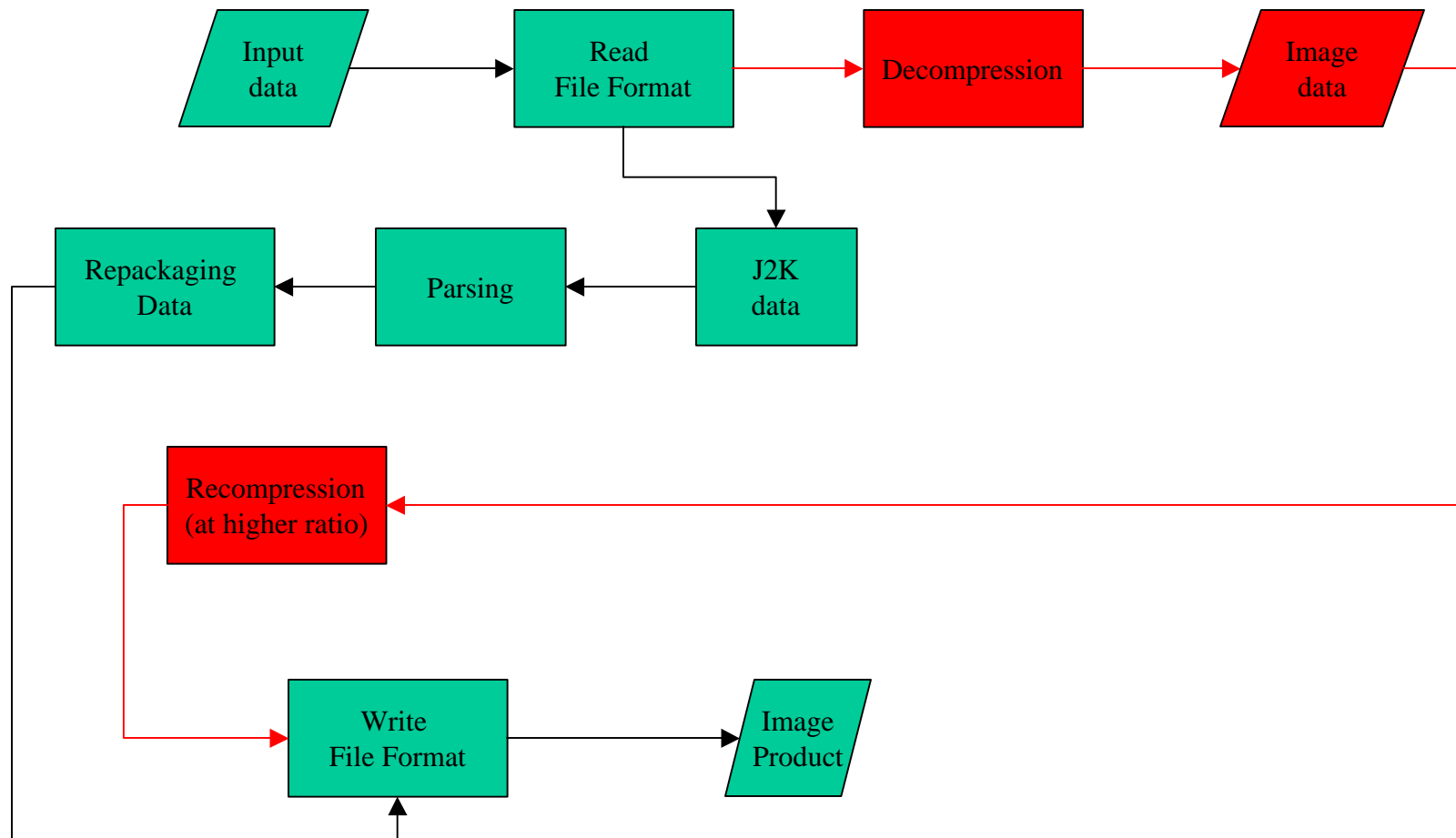


Example Process – Increased Compression Current





Example Process – Increased Compression J2K





J2K Quality Progressive bit stream

Image header	Pointers	Tile 1	Tile 2	Tile 3	Tile 4	Tile 5	Tile 6	Tile 7	Tile 8	Tile 9	Tile 10	Tile 11	Tile 12	Tile 13	Tile 14	Tile 15	Tile 16
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Layers 1-3
for all tiles.





J2K Quality Progressive bit stream

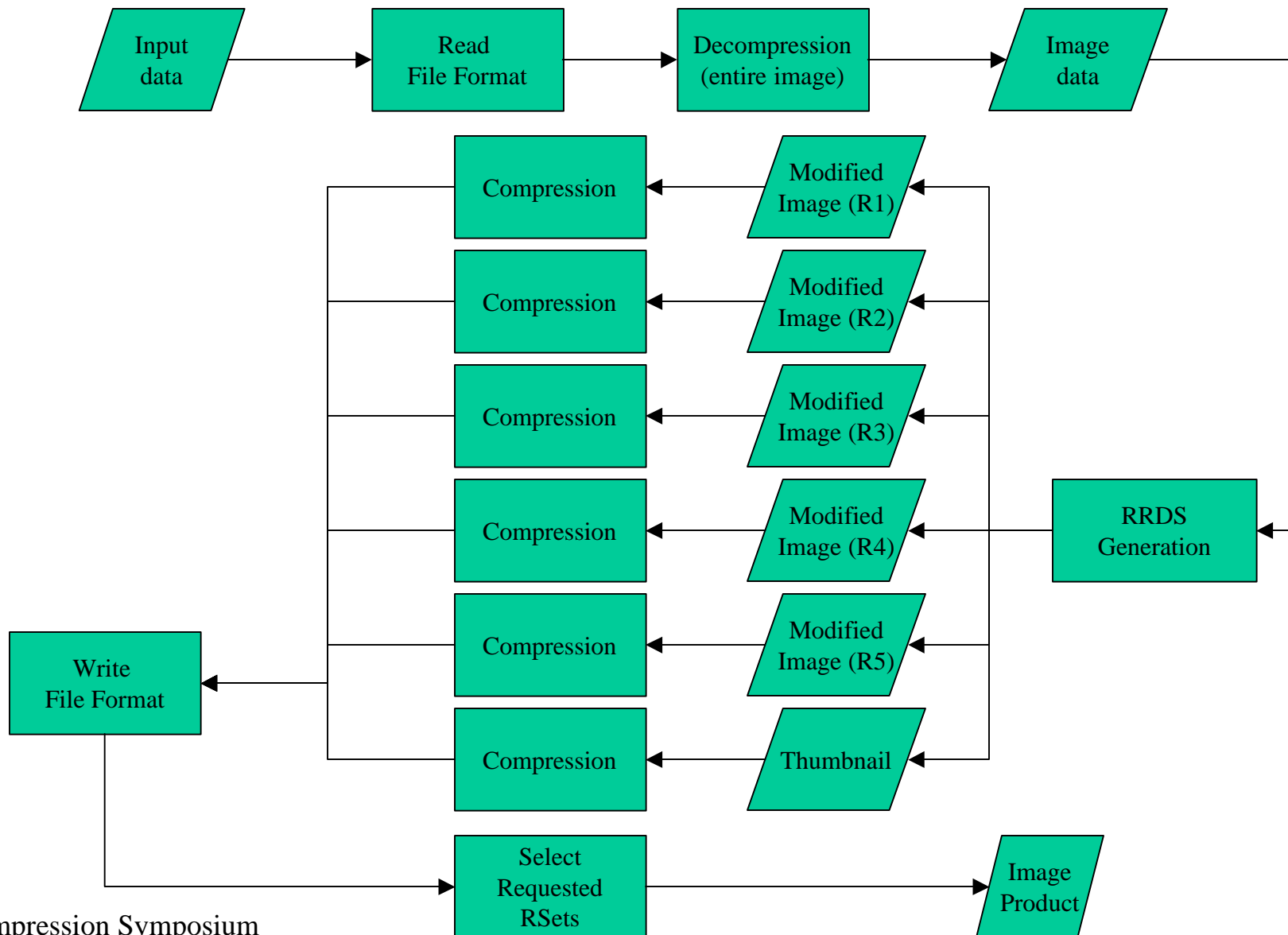


Layers 1-10
for all tiles.



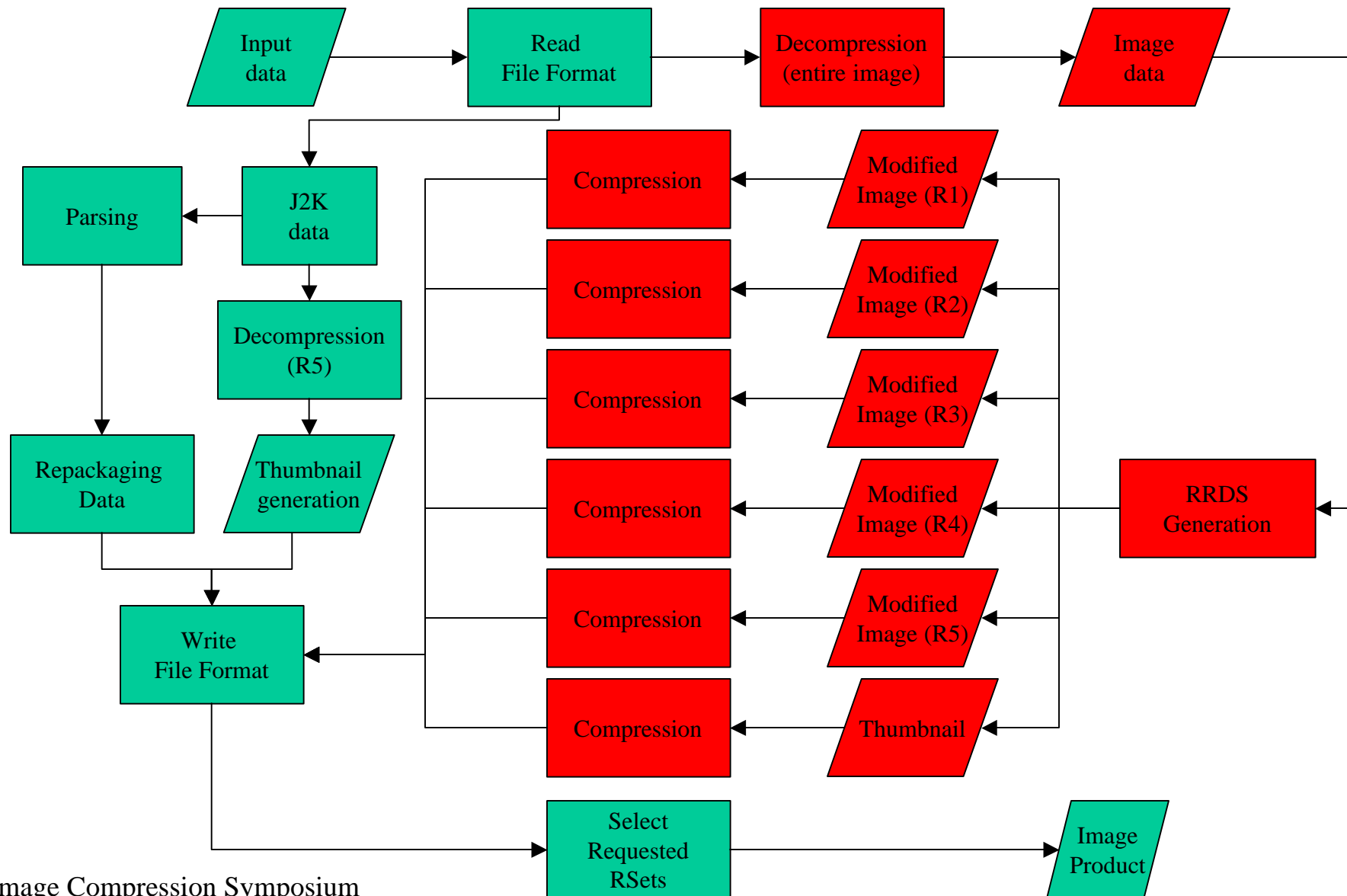


Example Process – RRDS Production Current



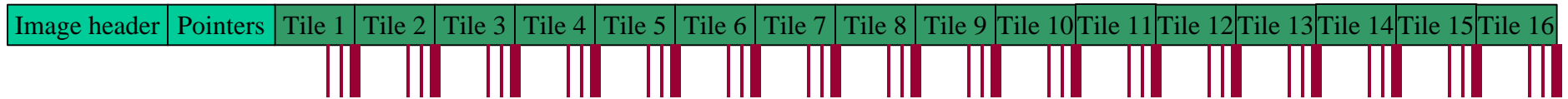


Example Process – RRDS Production J2K





J2K Quality Progressive bit stream



Resolution 3





J2K Quality Progressive bit stream



Resolution 2





J2K Quality Progressive bit stream

Image header	Pointers	Tile 1	Tile 2	Tile 3	Tile 4	Tile 5	Tile 6	Tile 7	Tile 8	Tile 9	Tile 10	Tile 11	Tile 12	Tile 13	Tile 14	Tile 15	Tile 16

Resolution 1

